

5513

Diag. Cht No. 1211-2.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey New York

Field No. 3 Office No. H-5513

LOCALITY

State New York

General locality Gardiners Bay, L.I.

Locality Orient Pt. to Little Gull Island

194 34

CHIEF OF PARTY

Wm. D. Patterson

LIBRARY & ARCHIVES

DATE September 24, 1934

5513

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

U. S. COAST & GEODETIC SURVEY
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SEP 24 1934

REG.
5513

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 3

REGISTER NO. 5513

State New York

General locality East Gardiners Bay L.I. Island

Locality Orient Pt. to Little Gull Island

Scale 1:10,000 Date of survey May - July, 1934

Vessel Field Party No. 5.

Chief of Party Lieut. Wm. D. Patterson

Surveyed by Lieut. (j.g.) George E. Morris, Jr.

Protracted by J. C. McIlwaine

Soundings penciled by G. R. Smith

Soundings in ~~fathoms~~ feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by C. L. Lightbown

Verified by " " "

Instructions dated May 14, 1934

Remarks:

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SHEET No. 3 (Field Number)

VICINITY OF PLUM ISLAND, NEW YORK.

DATE OF INSTRUCTIONS

Director's Instructions dated May 14, 1934.

SURVEY METHODS

Standard methods of survey were used. Positions were obtained by sextant angles on shore objects located by triangulation or topography. Depths were obtained by means of the mahogany bronze wire center tiller rope hand lead line, marked in fathoms and feet.

In Plum Gut a few soundings of 196 feet with no bottom were obtained. This is more than 10 feet greater than is shown on the chart. The soundings were taken while the survey launch was drifting through the pass with the current but considering the strong current, swirls, and eddies in the Gut it is probable that the lead was not heavy enough to keep the leadline taut. If previous soundings were obtained by methods which insure a vertical sounding, it is recommended that they be used instead of the soundings obtained during this survey.

DISCREPANCIES

The soundings from position 77E through 78E fail to check with other soundings. The heading by compass column in the sounding record shows that the course was changed to the southward but the line plots with an abrupt change to the northward. It is believed that one or both of the position angles is incorrect and it is recommended that position 78E and the soundings after position 77E be rejected.

Position 17N, with a sounding of 73 feet, plots outside of position 28M, with a sounding of 106 feet. Additional sounding lines tend to check the M day line. It is believed that one or both of the angles of position 17N is slightly in error and that the position of the sounding was actually a little south of where it plots. It is recommended that the M day line be taken as correct and the N day soundings be rejected where they fail to agree.

DANGERS

A rock 190 meters northwest of Orient Point Lighthouse with $1\frac{1}{2}$ feet of water over it (position 1H) is a danger to vessels entering or leaving Plum Gut from or towards the west. All boats should keep at least 200 meters away from the lighthouse except to the eastward of it.

Several small boats were observed to pass between Orient Point Lighthouse and Orient Point, crossing the outer end of Oyster Pond Reef. There are several rocks in this area and all vessels should pass east of Orient Point Lighthouse.

The northern shore of Orient Point, the shores of Plum Island, Great Gull Island, and Little Gull Island are rocky and several large submerged rocks are close to shore. An attempt was made to locate outermost rocks and obtain the depths on them. It is advisable for all vessels to keep 200 meters offshore, at least.

There are several submerged rocks north of Plum Island Rock red nun buoy No. 4 (topographic signal EBB) in Latitude $41^{\circ} 10.5'$, Longitude $72^{\circ} 10.7'$ (position 71F to 75F). It is advisable to clear the buoy by more than 150 meters.

A submerged rock with 2 feet of water over it (position 80B) is in Latitude $41^{\circ} 10.8'$, Longitude $72^{\circ} 10.5'$.

A submerged rock with 1 foot of water over it (position 79B) is in Latitude $41^{\circ} 10.7'$, Longitude $72^{\circ} 10.5'$.

Several rocks lie east of the eastern end of Plum Island (positions 125Q - 129Q). These can be avoided by staying well off the land.

A rock with 7 feet of water over it (position 1X) lies in Latitude $41^{\circ} 11.4'$, Longitude $72^{\circ} 09.0'$.

Old Silas Rock (topographic signal SILAS) Latitude $41^{\circ} 11.5'$, Longitude $72^{\circ} 08.8'$ is bare at all stages of the tide. It is advisable that all vessels using the pass between Plum Island and Great Gull Island go between Old Silas Rock and Great Gull Island, keeping at least 300 meters off Great Gull Island.

It is not advisable to pass between Great Gull Island and Little Gull Island because of the numerous rocks.

The wreck charted in Latitude $41^{\circ} 11.6'$, Longitude $72^{\circ} 09.0'$ was searched for by drift sounding and also with the portable wire drag but could not be found. It is recommended that it be removed from the chart.

All the charted dangers between Plum Island and Great Gull Island were searched for by drift sounding, watching for eddies, and with the portable wire drag (see report on Wire Drag Sheet 4008). The 7 foot spot found on the northern end of Bedford Reef was the only obstruction found.

Midway Shoal, 17 feet, not developed. Recommend sounding be retained on charts.

M. D. Patterson.

*Description of Topo Sta. and status
"Bare about 5' m. l. w." - Spick
of party's opinion is that it is so small
at extreme H.W. - Should be charted as
rock awash. C. N. G.*

*see
Review
par. 6c*

CHANNELS

Two usable channels connect Long Island Sound with Gardiners Bay, the one lying between Great Gull Island and Plum Island, and the other being Plum Gut.

Plum Gut is the deeper and is free from rocks and marked with aids to navigation (Plum Island Lighthouse, Orient Point Lighthouse and Midway Shoal Buoy). The least depth is 56 feet (Latitude $41^{\circ} 10.1'$, Longitude $72^{\circ} 13.1'$). This channel is used by all vessels.

The pass between Plum Island and Great Gull Island is divided by Old Silas Rock which bare at all stages of the tide. Between Plum Island and Old Silas Rock the water is deeper but there are several rocks east of Plum Island and a 7 foot spot approximately 350 meters west of Old Silas Rock on Bedford Reef. The controlling depth is 21 feet (Latitude $41^{\circ} 11.4'$, Longitude $72^{\circ} 09.4'$) but because the passage is narrow (400 meters) and the currents very strong it is advisable for vessels to pass east of Old Silas Rock where the controlling depth is 18 feet (Latitude $41^{\circ} 11.5'$, Longitude $72^{\circ} 08.8'$). This pass is used only by small yachts and fishing boats.

see note on previous page C.H.C.

shoal spots determined by H.D. in 1909 restrict this pass.

ANCHORAGES

Small yachts find shelter in Plum Gut Harbor where they lie alongside the wharves. Plum Island is a military post and the harbor can be used only with the permission of the post commander.

COMPARISON WITH PREVIOUS SURVEYS

The pass between Plum Island and Great Gull Island has changed considerably since the chart was made. Bedford Reef has changed in shape and a channel has cut through between Plum Island and Old Silas Rock. Several of the charted rocks were searched for and could not be found. The bottom is of a hard sand and boulder formation and it is believed that the strong currents have worn the sand away and undermined the rocks. It is recommended that this survey supersede the previous one.

WIRE DRAG GROUNDINGS

All wire drag groundings were investigated (see report to accompany Wire Drag Sheet 4008).

Approved:

Wm. D. Patterson
Wm. D. Patterson,
Lieut., C. & G. Survey,
Chief of Field Party No. 5.

Respectfully submitted,

George E. Morris, Jr.
George E. Morris, Jr.,
Lieut. (j.g.), C. & G. Survey,

STATISTICS HYDROGRAPHIC SHEET NO. 3

DAY	COLOR	DATE	VOLUME	STATUTE MILES	SOUNDINGS	POSITIONS
A	Red	June 15	1	5.5	249	39
B	"	" 18	1	14.0	402	101
C	"	" 20	1	4.0	179	35
D	"	" 21	1	17.4	388	97
E	"	" 22	1	9.4	242	83
F	"	" 25	2	9.2	254	93
G	"	" 29	2	0.5	166	61
H	"	July 2	3	5.3	125	41
J	"	" 3	3	17.0	266	120
K	"	" 5	3	6.2	114	59
L	"	" 7	3	8.4	208	88
M	"	" 9	3 & 4	3.3	340	59
N	"	" 10	4	22.5	379	121
P	"	" 11	4	17.4	470	123
Q	"	" 12	4 & 5	13.8	682	129
R	"	" 13	5	18.5	815	147
S	"	" 16	5 & 6	18.2	841	154
T	"	" 17	6	7.2	551	91
U	"	" 18	6	2.5	190	116
V	"	" 19	6 & 7	5.3	464	106
W	"	" 26	7	5.9	508	74
X	"	" 27	7		1	1
<hr/>						
22	Red		7	211.5	7834	1928

AREA 9.5 SQUARE STATUTE MILES

VERIFICATION REPORT ON H-5513.

1. The records conform to the requirements of the general instructions. ✓
2. The usual depth curves were completely drawn. ✓
3. The field plotting was completed to the extent prescribed in the Hydrographic Manual. ✓
4. The office draftsman had to do over a part of the field draftsman's work, namely:

The following positions were plotted incorrectly:

53 f day - Plotted 1° off L angle
1 d " - Used wrong signal
46 t " - Used wrong signal
31 v " - Wrong angle reading
18 h " - Wrong signal recorded in records
16 w " - Wrong angle. ✓

The sub-plan Insert "A" was redrawn to a larger scale to permit the soundings around the three wharves, in Plum Gut Harbor, to be shown in their proper relation to soundings in harbor. The field draftsman had shown three separate plans for these wharves. The word "rock" and some notes as to elevations, etc., were inked, near the location of rocks. "Rock" was erased and "Rk" substituted and the notes moved to the land area wherever possible. ✓

5. The junction with H-5515 was satisfactory except for a 17' sounding (50 green R day 5515). This sounding was verified from records and protracting, rechecked, and no error could be found from this source. *OK checked Rk*

difficult The junction with H-5383 is satisfactory in part, the principal exception being the line (87 - 90g day 5383) inclusive. These were carefully checked and no error could be found. This area is very rocky. Lt. Patterson said this is not an unlikely condition, however, at this location (Orient Point). ✓

~~The junction with H-5512 was not made inasmuch as it had not been verified upon completion of this sheet.~~

6. The following changes in positions were made to make positions and soundings conform with boat sheet or adjacent soundings, time, etc.:

Position 30 M day - Changed R L 20' ✓
" 118 P " - " R L 5° ✓
" 43 J " - " R L 2° ✓
authority CRB and EDE.

Position 17n and 78e with soundings from 77e to 78e were rejected as recommended in descriptive report. ✓

"116 U day appears to be erroneous. I consider that 115 U and the 3' and 8' soundings should be retained and the balance to an including 116 U be rejected."

EPE

The probable position of 116 U day makes these soundings unnecessary. The 3' and 8' have been retained. *Rk*

6. Continued.

A considerable amount of time was spent checking line 30q - 36q, which appeared erroneous; part of this line (33q - 36q, inclusive) was rejected by Lt. Patterson, Chief of Party, when he was in the office this week. ✓

among
The line 21w - 24w, North Shore Plum Island, appears to be too close inshore inasmuch as it runs through "dry" rocks. The rocks and shore line were checked with photostat of air photo celluloid and these seem to be correct. Lt. Patterson informed me that these soundings were taken from a skiff running among these rocks and boulders and it is very dangerous for a boat to come in close to shore.

The exact dimensions of wharves at Great Gull Island and Plum Island are contained in volumes on H-5513. Vol III pages 65 and 69. ✓

All required reports and records received, with the exception of *that there was no*
~~"Field Examinations."~~ *approval of records by Chief of Party*

Recoverable Stations filed under T-6098, Special Chart for Light-houses on Chart 298. ✓

Respectfully submitted,

C. Stanley Lightbown

C. Stanley Lightbown.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. H. 5513

The following statistics will be submitted with the
cartographer's report on the sheet:

Number of positions on sheet1928
Number of positions checked234
Number of positions revised6
Number of soundings recorded7834
Number of soundings revised74
Number of signals erroneously plotted or transferred0

Date: Nov. 21, 1934.....

Cartographer: C. STANLEY LIGHT BOWN.....

Verification of pretracting
Verification & inking of specks and shoals) by C-S-L

Verification of inking by C-S-L

Review by R. J. Christman
R. L. Johnston

Time: } 91

Time:

Time: 61 hr

52 hr

To: Mr. Bacon.
From L. S. S.

GEOGRAPHIC NAMES

Survey No. H 5513

Date. October 4 1934

Chart No. 298, 1211 & 1212

Names underlined in red approved Oct. 6, 1934.
H.B.

Diagram No. 1211 - 2

* Approved by the Division of Geographic Names, Department of Interior.

φ, Not Approved by the Division of Geographic Names, Department of Interior.

R, Referred to the Division of Geographic Names, Department of Interior.

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
<i>H.B.</i>	-----	<u>Orient Pt.</u> ✓	----	----	41°09.5' 72°14.5'
<i>H.B.</i>	-----	<u>Plum Island</u> ✓	----	----	41°10.8' 72°11.7'
<i>H.B.</i>	-----	<u>Plum Gut Harbor</u> ✓	----	----	41°10.3' 72°12.2'
<i>H.B.</i>	-----	<u>Pine Pt.</u> ✓	----	----	41°10' 72°12'
<i>H.B.</i>	-----	<u>Plum Gut</u> ✓	----	----	41°10.1' 72°13.2'
<i>H.B.</i>	<u>Old Silas Rock</u>	Same	----	----	41°11.5' 72°08.8'
<i>H.B.</i>	-----	<u>Great Gull I.</u> ✓	----	----	41°12.2' 72°06.7'
<i>H.B.</i>	-----	<u>Little Gull I.</u> ✓	----	----	41°12.4' 72°06.2'
<i>H.B.</i>	-----	<u>Cardiners Bay</u> ✓	----	----	41°08.9' 72°12.0'
<i>H.B.</i>	-----	<u>Block Island Sound</u> ✓	----	----	41°10.4' 72°06.2'
<i>H.B.</i>	<u>Bedford Reef</u>	Same	Reef at Long extending from Sat 41°11' to 41°11.6'	72°09' 41°11.6'	41°10.7' 72°08.6'
<i>H.B.</i>	<u>Midway Shoal</u>	Same			41°09.7' 72°12.7'

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

New Bedford, Massachusetts.

September 18 1934.

DIRECTOR, U. S. COAST AND GEODETIC SURVEY:

The following determined objects are prominent, can be readily distinguished from seaward from the description given below, and should be charted.

Wm. D. Patterson, Lieut.

Chief of Party.

[illegible]

A list of objects which are of sufficient prominence for use on the charts, together with a description of the same, must be furnished in a special report on this form, and a copy of such report must be attached by the Chief of Party to his descriptive report. The selection, determination, and description of these points are of primary importance.

The description of each object should be short, but such as will identify it; for example, standpipe, water tower, church spire, tank, tall stack, red chimney, radio mast, etc. Generally, flagstaves and like objects are not sufficiently permanent to

LAC

October 20, 1934.

Division of Hydrography and Topography:

/ Division of Charts:

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5513


Locality Orient Point to Little Gull Island, Long Island, New York

Chief of Party: W. D. Patterson in 1934
Plane of reference is mean low water, reading
1.8 ft. on tide staff at Plum Gut Harbor
14.1 ft. below B.M. 1

2.2 ft. on tide staff at Greenport
6.5 ft. below B.M. 2

Height of mean high water above plane of reference
is approximately 2.5 ft.

Condition of records satisfactory except as noted below:


Acting Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5513 (1934)

Orient Point to Little Gull Island, Gardiners Bay, L. I., New York
Original Instructions dated March 17, 1933 (L. C. Wilder)
Supplemental Instructions dated May 14, 1934 (W. D. Patterson)
Surveyed May - July, 1934

Hand Lead Soundings.

3 Point Fixes on Shore Signals.

Chief of Party - W. D. Patterson.
Surveyed by - G. E. Morris, Jr.
Protracted by - J. C. McIlwain.
Soundings penciled by - C. R. Smith.
Verified and Inked by - C. Stanley Lightbown.

1. Condition of Records.

The records conform to the requirements of the Hydrographic Manual, except that no separate "Approval Sheet" was attached to the Descriptive Report (par. 174).

2. Compliance with Instructions for the Project.

The general plan is in accordance with the instructions but the extent of the development is not such that this survey can be classed as a basic survey. There are too many wide discrepancies in general depths, too many holidays which were not adequately filled with hydrography, and too many charted shoal spots which were either not investigated at all by the hydrographic party or were thought to be disproved but on which not sufficient time for development has been spent for final disposal, considering the authenticity of the original records. Consideration has been given to the fact that this is an unusually difficult area in which to make a hydrographic survey. No criticism is intended as to the inability of the hydrographic party to properly space lines. However, more lines should have been run later in order to fill the holidays and to complete the work in areas in which strong currents displaced the original system of lines.

The Chief of Party contends that in certain areas within this survey the depth has increased. This may be true, but it is an unusual condition in areas similar to this. Considering the strength of the current, it is not felt that the Chief of Party's contention has been definitely proved. This has necessitated carrying forward from older surveys numerous shoal soundings, regardless of the fact that the Chief of Party recommends that they be superseded.

To supplement this survey by soundings from prior surveys is very unsatisfactory, due to the numerous instances in which the surrounding depths of the older surveys did not check favorably with those of the new.

The chief criticism is lack of adequate development; too great spacing of lines, considering the conditions found; too numerous holidays which were not later filled with hydrography; and too many shoal spots which were either not investigated at all or inadequately investigated.

The wire drag work done by the party was practically useless insofar as it was an attempt to disprove previous charted shoal soundings. Such methods are valuable in locating dangers, but are not adequate to disprove the existence of shoals. Adequate drag work by a well organized drag party only is necessary to disprove previously charted shoals.

3. Sounding Line Crossings.

Soundings on cross lines are in fair agreement considering the irregular nature of the bottom in most of this area.

4. Depth Curves.

Within the limits of the present survey, the usual depth curves may be satisfactorily drawn, including a small portion of the low water line.

5. Junction with Adjacent Surveys.

- a. Junctions with contemporary surveys H-5383 (1933), H-5514 (1934), and H-5515 (1934) are satisfactory except for a small holiday with H-5515 (1934) northward of Little Gull Island, where an additional line should have been run.
- b. An adequate junction is made with H-1590a and b (1883) along the northern border of the present survey. The depths in several places seem to be slightly greater on the new survey, possibly due to the use of too light a lead for the strong currents encountered. However, no difficulty should be experienced in combining the two surveys for charting purposes. The overlapping area is considered in paragraph 6c.

6. Comparison with Prior Surveys.

- a. H-80 (1838), H-90 (1839-45),
H-87 (1839), H-91 (1839),
H-88 (1845), H-95 (1839),
H-89 (1845), H-96 (1839).

These surveys represent the first survey by this Bureau of the area under consideration. The hydrography is rather open as compared with present standards, and a number of shoals were found by later surveys of which there was no indication on these surveys. All important details are covered by the later surveys and there is no need for the use of any of the information on these surveys for charting purposes.

b. H-1255 (1874).

This survey is on a larger scale and is in more detail than the present survey, which is rather open, especially in the area southwest of Plum I. L. H. (lat. $41^{\circ}10.2'$, long. $72^{\circ}13.0'$). It would be desirable to make use of the soundings from H-1255 (1874), but because they are in poor agreement in some places, there is a question as to whether changes have occurred. Three soundings of the present survey fall in shoaler depths on the old survey and change the shape of the 10 fathom curve. A 65 foot sounding (lat. $41^{\circ}10.25'$, long. $73^{\circ}13.03'$), a 101 foot sounding (lat. $41^{\circ}10.16'$, long. $73^{\circ}12.8'$) and 67 foot sounding (lat. $41^{\circ}10.19'$, long. $73^{\circ}12.91'$). The last named sounding is particularly doubtful as it falls close to a 5 fathom shoal on H-1255 (1874) and it was necessary to draw the 10 fathom curve 200 meters north of the old curve on the basis of this single sounding. The shoals on Middle Ground (S.S.W. from Plum I. L. H.) as well as Midway Shoal (between Orient Pt. and Pine Pt.) were not developed on the present survey and the shoalest depths have been added to H-5513 (1934). The 8 foot rock called Beebe Rock in lat. $41^{\circ}10.37'$, long. $72^{\circ}12.85'$, falls in depths of from 23 to 42 feet on the present survey and is just outside of the drag limits of H-3022 (1909-10). For some reason the rock has not been charted but no information could be found that it had ever been removed. It should be charted pending further investigation.

c. H-1543 (1882).

This survey covers the area adjacent to the southern end of Plum I. and is on a scale of 1-20,000. It is in only fair general agreement with the present survey and shows some shoaler depths, most of which appear to represent general differences. Nevertheless, some of the charted soundings from this survey, which fall in open areas on the present survey, have been carried forward to the present survey even though the surrounding soundings are deeper. A 19 foot charted sounding in lat. $41^{\circ}10.15'$, long. $72^{\circ}12.85'$ apparently originates with a $3\frac{1}{2}$ fathom sounding on H-1543 (1882), since no other source could be found. A check on the line on which this sounding appears (pos. 7k to pos. 14k, green) shows that the position numbers had been reversed in the original plotting and that all soundings on this line were in an incorrect position. The line has been correctly plotted on an insert on H-1543 (1882) and the $3\frac{1}{2}$ fathom sounding has been added to H-5513 in its correct position (lat. $41^{\circ}10.23'$, long. $72^{\circ}12.95'$) as 21 feet. The charted 19 should be removed from the chart.

d. H-1590a (1883-1901) and H-1590b (1883).

These surveys cover practically the entire area of the present survey except the area on either side of Pine Pt., off the southern end of Plum I. They are generally in fair agreement except in a few places where changes are indicated, such as Bedford Reef. There are some isolated shoals shown on H-1590a (1883-1901), which were not found on the present survey, and these have been carried forward to H-5513 (1934).

- (1) A charted 8 foot rock in lat. $41^{\circ}11.6'$, long. $72^{\circ}08.47'$ originates from H-1590a (1883-1901) and was located in 1901 by the party of P. A. Welker (pos. 2a). The rock is surrounded by depths of 24 to 30 feet on the present survey. The present field party cleared its position with the wire drag, effective depth $8\frac{1}{2}$ feet, which is considered insufficient to disprove its existence. The rock has been added to the present survey and should be continued on the chart until definitely disproved with the wire drag.
- (2) A charted 11 foot spot in lat. $41^{\circ}11.1'$, long. $72^{\circ}11.95'$ originates with H-1590a (1883-1901). As no examination was made of this in 1934, the 11 has been added to the present survey and should be retained on the chart.
- (3) A charted 13 foot spot in lat. $41^{\circ}11.4'$, long. $72^{\circ}11.7'$ originates with H-1590a (1883-1901) and was located by an independent fix (pos. 2p, Aug. 14). It falls close to the 30 foot curve on the present survey but no search was made for the 13 which has been added to H-5513 (1934) and should be retained on the chart. The charted rocks inshore from the 13 foot soundings are also from H-1590a (1883) and differ a little from those shown on H-5513 (1934), however the new delineation should be accepted.
- (4) The charted 2 foot spot in lat. $41^{\circ}11.35'$, long. $72^{\circ}11.33'$ originates with H-1590a (1883-1901). It may have been intended for a 2 or for a rock symbol, but no position number was shown on it and no mention of it could be found in the records. The present survey located a rock, bare 2 feet at MLW, about 70 meters to the eastward. It seems probable that the old 2 was an indefinite location of the same rock. The charted 2 foot spot should be replaced on the chart by the rock awash from H-5513 (1934).
- (5) A charted 12 foot sounding in lat. $41^{\circ}11.3'$, long. $72^{\circ}10.83'$ originates with H-1590a (1883-1901). This is an intermediate sounding on a line running offshore and could easily have been plotted a little closer inshore. As charted the 12 falls off the face of a dock where the present survey shows depths of 20 feet. The 12 should be disregarded in future charting.

- (6) A charted 8 foot sounding and a charted 12 foot sounding, off the northeastern end of Plum I. in approximate lat. $41^{\circ}11.4'$, long. $72^{\circ}09.55'$ originate with H-1590a (1883). Both soundings fall in open area on the present survey and have been carried forward.
- (7) A charted 8 foot sounding in lat. $41^{\circ}11.6'$, long. $72^{\circ}09.0'$ was taken from a line of soundings which shows 3 other depths under 12 feet just south of the 8. All of these soundings fall in depths of from 14 to 16 feet on the present survey. It is believed that the original soundings were either in error or that the bottom has worn away. The 8 should be replaced on the chart by soundings from the present survey.
- (8) A 14 foot sounding charted in lat. $41^{\circ}11.53'$, long. $72^{\circ}08.9'$ falls in depths of from 19 to 21 feet on the present survey, which indicates that the shape of this shoal has changed. The 14 should be disregarded in future charting.
- (9) In the area between the northeastern end of Plum I. and Old Silas Rock the two surveys are in fair agreement. H-1590a (1883) shows some shoaler depths such as the charted 22 in lat. $41^{\circ}11.2'$, long. $72^{\circ}09.5'$, which was not brought forward because it falls in depths of 26 feet on the present survey and the entire area appears to have changed somewhat. Numerous charted shoals in this area originate with a wire drag survey, H-3022 (1909-10), and will be discussed under that sheet.
- (10) The general shape of Bedford Reef and the shoaling northwest of it, lat. $41^{\circ}11.2'$, long. $72^{\circ}09.1'$, appears to have changed considerably. A 14 has been added to H-5513 (1934) in lat. $41^{\circ}11.15'$, long. $72^{\circ}09.1'$, but the 14 foot sounding in lat. $41^{\circ}11.03'$, long. $72^{\circ}09.2'$ has been omitted because there seems to have been a general change in this part of the shoal. The charted 15 foot sounding in lat. $41^{\circ}10.93'$, long. $72^{\circ}08.6'$ has been carried forward because it falls in blank area on the present survey.

A 17 foot charted sounding in lat. $41^{\circ}10.73'$, long. $72^{\circ}08.32'$ was added to the present survey because it falls in open area and the surrounding soundings are in agreement.

A 21 foot charted sounding in lat. $41^{\circ}10.78'$, long. $72^{\circ}08.1'$ was also added to the present survey for the same reason.
- (11) A charted 19 foot sounding in lat. $41^{\circ}10.7'$, long. $72^{\circ}08.8'$ falls in depths of 24 feet on the present survey. Because there appears to have been a general change in this area, the 19 has been omitted from H-5513 (1934) and should be disregarded in future charting.

- 1574
- (12) A charted detached shoal in lat. $41^{\circ}10.8'$, long. $72^{\circ}11.25'$ originates from a single sounding of 5 feet on H-1590a (1883) and also some small bare rock symbols shown on T-1543b (1883). Altho not seen by the hydrographic parties of 1883 or 1934, these rocks have been added to the present survey as rocks awash. They should be so charted pending further investigation.
- (13) A charted 18 foot sounding in lat. $41^{\circ}11.55'$, long. $72^{\circ}07.8'$ has been added to H-5513 (1934) because it falls in an open area and the surrounding soundings are in agreement. It should be retained on the chart.
- (14) The spit making off the southwest end of Great Gull I. appears to have changed. The shoreline of the island is different than shown on the 1883 surveys. The charted 9 foot sounding in lat. $41^{\circ}11.82'$, long. $72^{\circ}07.67'$ is the outside sounding on a line of soundings which is not in agreement with those of the present survey. The spit was not developed closely enough to definitely disprove the old soundings and the 9 has been carried forward to the present survey as a matter of safety.
- (15) A charted 17 foot spot in lat. $41^{\circ}12.42'$, long. $72^{\circ}06.85'$, as well as a charted 13 foot sounding south of it, were not disproved by the present survey and have been brought forward to H-5513. The 17 is a single sounding between deeper casts and might be a misreading of the leadline, however the bottom is irregular.

e. H-3022 (1909-10).

This wire drag survey covers the area between the northeastern end of Plum Island and Old Silas Rock. It shows numerous shoals which are not indicated on the surveys of 1883 or 1934. The present field party believes that the strong currents have worn the sand away and undermined the rocks. (See page 3 of this Descriptive Report). The present field party also did some dragging in this area. They report that the entire pass was dragged with a depth just sufficient to clear the least depths found by the hydrographic party but most of this was done when the weather was too hazy to obtain visual fixes for position. (See their wire drag report, attached to the Descriptive Report of H-5513 of H-4008). This office has no record other than this statement that this has been accomplished. An examination of the 1934 wire drag records shows only two drag strips with effective depths of $6\frac{1}{2}$ and $8\frac{1}{2}$ feet, respectively. These depths are insufficient to disprove the old drag soundings and all of them have been transferred to H-5513 (1934) and should be retained on the chart until conclusively disproved by another wire drag examination.

Add. Wk.
1934
Wire Drag

f. H-3907 (1916).

This wire drag survey covers only a small part of the present survey through Plum Gut. Only one shoal found by the drag falls within the common area and this has been added to H-5513 (1934).

g. H-4008 (1917-18) W.D. and H-4008a (1917-18) W.D.

None of the shoals found on this wire drag survey fall within the limits of the present survey.

7. Comparison with Chart No. 298.

a. Hydrography.

Within the area of the present survey the chart is based on surveys discussed in the foregoing paragraphs and contains no additional information that needs consideration in this review. The wreck charted in lat. $41^{\circ}11.5'$, long. $72^{\circ}09'$ was reported in chart letter 146 of 1930. No evidence of its continued existence was found after a search by drift soundings and a portable wire drag. The field parties' recommendation that it be removed from the chart is concurred in. (See Descriptive Report, page 2.)

b. Aids to Navigation.

The C1 buoy (signal Ad) northeast of Little Gull Island was located about 300 meters northeast of its charted position. The can buoy (signal Zed) was located about 200 meters west and 60 meters north of its charted position. The buoys in the determined positions adequately serve the purpose as aids to navigation. Other floating aids were found close to their charted positions.

8. Field Plotting.

Protracting was only fair. A number of errors in positions were found which should have been picked up during the smooth plotting if proper weight had been given to course, time and to depth on adjacent lines.

The penciling of soundings was satisfactory.

9. Additional Field Work. Recommended.

The present survey does not represent a complete survey of this area without the addition of soundings from the old surveys. Some of the charted shoals were not developed. The following additional field work should be accomplished:

- a. The area between the northeastern end of Plum I. and Old Silas Rock, approximate lat. $41^{\circ}11.4'$, long. $72^{\circ}09.2'$, should be wire dragged with depths sufficient to disprove or verify the shoals previously found by the drag. The present field party believe some of these shoals have disappeared. (See par. 6c, comparison with H-3022 (1909-10)).
- b. The 8 foot rock, east of Old Silas Rock in lat. $41^{\circ}11.56'$, long. $72^{\circ}08.46'$, should be covered by the wire drag with an effective depth of 17 feet. If the drag grounds on the rock, the least depth should be determined. The rock was cleared with an effective depth of $8\frac{1}{2}$ feet in 1934, which was insufficient to disprove its existence.
- c. The 13 foot rock from the survey of 1883 in lat. $41^{\circ}11.4'$, long. $72^{\circ}11.7$ should be examined.
- d. The Middle Ground southwest of Plum I. L. H. (lat. $41^{\circ}10.2'$, long. $72^{\circ}13.0'$) should be further developed. In connection with this work the 8 foot rock, called Beebe Rock on H-1255 (1874), in lat. $41^{\circ}10.37'$, long. $72^{\circ}12.85'$, should be relocated and examined. This rock is not charted but no information could be found that it had ever been removed.
- e. The spit making in a southwesterly direction from Great Gull I. should be further developed. It appears to have changed since the survey of 1883 and the 9 foot sounding in lat. $41^{\circ}11.82'$, long. $72^{\circ}07.68'$ may not exist at the present time altho not disproved by the soundings of 1934.
- f. Midway Shoal, lat. $41^{\circ}09.73'$, long. $72^{\circ}12.73'$, should be developed.
- g. The rocks described in par. 6d(12) of this review should be investigated when additional work is done.
- h. In addition to the additional work specifically mentioned above, there are a large number of places in which split lines should be run, holidays on the present survey should be filled with hydrography, numerous soundings carried forward should be investigated, and an attempt should be made to definitely prove or disprove the Chief of Party's contention that the channels have deepened in certain specific places.

It is probably impossible to prove or disprove the depth of water on the numerous shoals between Old Silas Rock and Plum Island without a new wire drag survey.

- i. An adequate wire drag survey within parts of this area in question is recommended for the near future.

10. Note to Compiler.

The present survey is not considered a basic survey, even with the information which has been carried forward, and all of the previous hydrographic surveys in this area are not superseded. This survey has been given a careful review but the compiler of the chart in this area should consider prior surveys in conjunction with the present survey. The deeper no bottom soundings on the present survey, H-5513 (1934) in Plum Gut, should not be charted. The field party states that the lead used was probably not heavy enough to insure vertical casts in the strong currents encountered. The shoals and shoal soundings from the wire drag survey H-3022 (1909-1910) between Plum Island and Old Silas Rock should be continued on any new charts. The recommendation of the Chief of Party that these be superseded is not approved.

11. Old Surveys within the area of H-5513 (1934).

Altho certain information has been added to H-5513 (1934) from prior surveys, it cannot be considered a basic survey.

The following surveys within the area covered by H-5513 (1934) are superseded for charting purposes:

H-80 (1838)	in part.
H-87 (1839)	" "
H-88 (1845)	" "
H-89 (1845)	" "
H-90 (1839-45)	" "
H-91 (1839)	" "
H-95 (1839)	" "
H-96 (1839)	" "

The following surveys are not superseded and should be used to supplement H-5513 (1934):

H-1255 (1874)
H-1543 (1882)
H-1590a (1883 and 1901)
H-1590b (1883)

12. Reviewed by - R. J. Christman and R. L. Johnston, March, ~~1913~~ 1934.

Supervised by - A. L. Shalowitz.

K. T. Adams

K. T. Adams,
Assistant Chief, Division of Charts.

Paul G. Smith
Acting
Chief, Section of Field Work.

Examined and approved:

L. O. Pollut.
Chief, Division of Charts.

G. H. Hude
Chief, Division of H. & T.

5
↓ ?
1934.1
See original
map - July 1934

5513

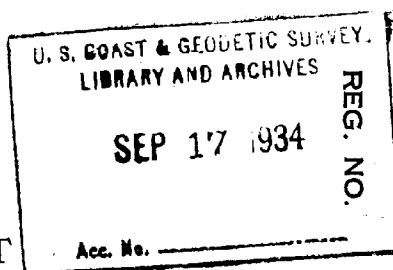
WIRE DRAG

Additional work

5513
WIRE DRAG
Additional work

Form 504
U. S. COAST AND GEODETIC SURVEY DEPARTMENT OF COMMERCE
DESCRIPTIVE REPORT
Type of Survey Hydrographic
Field No. Office No. H-5513 Ad. Wk. W.D.
LOCALITY
State New York
General locality Eastern End of Long Island
Locality Vicinity of Plum Island
19/ 34
CHIEF OF PARTY
W. D. Patterson
LIBRARY & ARCHIVES
DATE September 17, 1934

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY



HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. _____

REGISTER NO. **H5513** *add'l. wk. W.D.*
~~4068 Wire Drag~~

State New York

General locality Eastern End of Long Island

Locality Vicinity of Plum Island

Scale 1:20,000 Date of survey July 27-30, 19 34

Vessel Field Party No. 5.

Chief of Party Lieut. Wm. D. Patterson.

Surveyed by Lieut. (j.g.) George E. Morris, Jr.

Protracted by _____

Soundings penciled by _____

Soundings in fathoms feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated May 14, 19 34

Remarks: Supplemental Wire Drag work to be plotted on original
smooth sheet in the Washington Office.

page 1

add'l Work

DESCRIPTIVE REPORT TO ACCOMPANY

WIRE DRAG SHEET No. ~~4000~~ 5513

EASTERN END OF PLUM ISLAND.

DATE OF INSTRUCTIONS

Director's Instructions dated May 14, 1934.

SURVEY METHODS

A small portable wire drag having three 100 foot sections and 100 foot tow lines was used. The Nellie Grey W. acted as guide launch and the Leila T. as end launch. Each launch obtained three point sextant fixes on shore objects for position. These angles were taken on both launches at a signal given from the guide launch. A skiff with outboard motor was used as a tender.

COMPARISON WITH PREVIOUS SURVEYS

The shoal spots in the pass between Plum Island and Great Gull Island were investigated with the drag set at a depth just sufficient to clear the least depth found by the hydrographic party. The only obstruction encountered was when dragging for the charted 3 foot spot in Latitude $41^{\circ} 11.4'$, Longitude $72^{\circ} 09.1'$. The least depth found when the grounding was investigated was 7.5 feet (Sheet 3, Vol. 7, Page 36).

The entire pass between Plum Island and Old Silas Rock, and the vicinity of the charted 8 foot spot east of Old Silas Rock, was covered with the drag set at a depth just sufficient to clear the least depths found by the hydrographic party. Most of this dragging was done when the weather was too hazy to obtain visual fixes for position. Since there were no groundings, other than the one of A day, it was not thought advisable to take the additional time necessary to re-run the strips when the weather was clear. The drag strips were run with the current by keeping just enough headway on the towing launches to keep the bottom wire taut and allowing the launches to drift through the pass. In running against the current the drag lift was too great for effective dragging.

The tidal current through this pass reaches an estimated maximum velocity of 5 knots. The hydrographic survey shows considerable change since the chart was made. It is believed that the current has worn the shoal spots away.

See review of

H 4008 (add'l. wk. 1934)

WIRE DRAG GROUNDINGS

All groundings of the drag were investigated with the hand lead. ✓

BOAT SHEET

Positions were plotted on tracing paper laid over Hydro-graphic Sheet 3, used as boat sheet. It is believed that the office desires the smooth plotting to be done on existing sheets in the office. *Plotting was not submitted to the office J.G.H.*

STATISTICS

Date	Day letter	Miles Drag Strips	Positions
July 27	A	1.0	7
" 30	B	1.0	31
	2		38

Respectfully submitted,

George E. Morris, Jr.
George E. Morris, Jr.,
Lieut. (j.g.), C. & G. Survey.

Approved,

Wm. D. Patterson
Wm. D. Patterson,
Lieut., C. & G. Survey,
Chief of Field Party No. 5.

Lac

September 20, 1934

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in

1 volume/ of ~~soundings~~ wire drag records for

HYDROGRAPHIC SHEET

5513
~~4008~~ (Additional Work) *wire drag,*

Locality Plum Island, Long Island, New York

Chief of Party: W. D. Patterson in 1934

Plane of reference is mean low water, reading

2.2 ft. on tide staff at Greenport (Allowance made for time of tide at place
6.5 ft. below B. M. 2 of sounding)

Height of mean high water above plane of reference is

approximately 2.5 ft.

Condition of records satisfactory except as noted below:

Paul J. Whelan

Chief, Division of Tides and Currents

Verifier's Report on Additional Drag Work on
H-4008. Changed to H-5513 Add'l WK W.D.

Records are not kept according to specifications of drag manual. Length of upright, length of towline and length of drag are not entered.

Work done, in opinion of verifier proves nothing. A sufficient number of buoy positions were plotted on an overlay to prove that no credence ~~to~~ could be given to any results obtained. Buoy positions will plot within 20 or 20 meters of each other and then without change in time will plot two or three hundred meters apart. Length of drag is supposed to be three hundred feet yet three quarters of the positions would indicate that it was between 500 or 600 feet. Speed was computed to be nine knots between 15 and 16 h. Even with the five knot current mentioned in the report this would leave 4 knot speed through the water which is rather fast. ~~Since have been run in the opposite direction and if the foregoing figures are to be credited the boats must have been towing the drag at six knots or better to back the current.~~

The only place where the drag might have crossed the shoal area the results were discredited as mentioned before by the fact that the scaled distance between end buoys exceeded by a considerable margin the 300 foot length of drag.

This work was done on an overlay of H-5513. Verifier has not submitted smooth plotting of drag strips. Comdr. Colburn and Lt. Green have examined rough plotting by verifier and concur in the opinion that soundings only are to be given any credence.

April 25, 1925. Submitted

J. A. McCormick

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5513 (ADD'L. WK., 1934, WIRE DRAG)

Eastern end of Long Island, Plum Island, New York
Instructions dated May 14, 1934 (W. D. Patterson)
Surveyed July, 1934

Chief of Party - W. D. Patterson.
Surveyed by - G. E. Morris, Jr.

1. Scope of Survey.

The purpose of this survey was to examine by wire drag certain shoal spots in the pass between Plum Island and Great Gull Island, particularly the charted 3 foot spot from H-3022 (1909-'10) at lat. $41^{\circ}11.45'$, long. $72^{\circ}09.05'$ and the charted 8 foot spot from H-1590a (1901) at lat. $41^{\circ}11.58'$, long. $72^{\circ}08.48'$.

2. Results of Survey.

No plotting of the drag strips was submitted by the field party. A rough plotting was made in the office, which revealed the following:

- a. No drag work is recorded in the vicinity of the 8 foot spot. This is probably due to the inability to obtain fixes at the time of dragging. (See Descriptive Report, page 1). The 8 foot spot will, therefore, be continued on the charts.
- b. Buoy positions would plot within 20 or 30 meters of each other and then without change in time interval would plot two or three hundred meters apart.
- c. The length of the drag was supposed to be 300 feet, yet the majority of the positions indicate that it was between 500 and 600 feet.
- d. The computed speed between pos. 15 and 16b was nine knots. The current was estimated to be 5 knots as mentioned in the Descriptive Report which would result in a speed of 4 knots for the drag through the water, which is considered too fast for effective drag work.
- e. The only place where the drag might have crossed the 3 foot shoal spot, the results are discredited by the fact that the scaled distance between the end buoys exceeded by a considerable margin the recorded 300 foot length of drag.

In view of the above, the drag work is considered inadequate for disproving the shoals mentioned in paragraph 1, this review, and has not been smooth plotted. (Concurred in by the Chief of Division and Chief of Section).

The only definite information obtained from this survey is a 7 foot sounding in lat. $41^{\circ}11.45'$, long. $72^{\circ}09.04'$, which has been plotted on H-5513 (1934) and recorded in Vol. 7 (pos. lx) of the original work.

3. Reviewed by - John G. Ladd, April, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

K.T. Adams

K. T. Adams,
Asst. Chief, Division of Charts.

R.O. Robert

Chief, Division of Charts.

F.S. Borden

Chief, Section of Field Work.

G. Wade

Chief, Division of H. & T.

applied to drawing of chart 298.

July 11, 1935
G.H.S.

Applied to drawing of chart 1211

July 15, 1935
G.H.S.

Applied to chart 1212 via 1211 J.M.A. Apr. 1936

FULLY APPLIED TO CHART 13212 RECONSTRUCTION

3-05-79 GPH

25 Jan 13, 1936
L.A.S.